What is Claimed:

1. A mega-boule for use in fabricating microchannel plates (MCPs), the mega-boule comprising

a cross-sectional surface including at least first, second and third areas, each area occupying a distinct portion of the cross-sectional surface;

the first and second areas including a plurality of optical fibers, transversely oriented to the cross-sectional surface, each optical fiber having a cladding formed of non-etchable material and a core formed of etchable material; and

the third area disposed interstitially between and surrounding the first and second areas, the third area formed of non-etchable material.

2. The mega-boule of claim 1 further including

at least a fourth area, occupying another distinct portion of the cross-sectional surface;

the fourth area including another plurality of optical fibers of substantially similar materials of the optical fibers of the first and second areas; and

the third area disposed interstitially between and surrounding the first, second and fourth areas.

3. The mega-boule of claim 1 wherein

the echable material and the non-etchable material are glass, and

the non-etchable material includes a higher lead content than the etchable material.

4. The mega-boule of claim 1 wherein

the non-etchable material of the third area includes a plurality of support rods transversely oriented to the cross-sectional surface, and

an optical fiber of the plurality of optical fibers and a support rod of the plurality of support rods have a cross-sectional area substantially similar to each other.

5. The mega-boule of claim 1 wherein

the non-etchable material of the third area includes a plurality of support rods transversely oriented to the cross-sectional surface, and

the optical fibers of the first area and a portion of the plurality of support rods are configured for use as an MCP.

6. The mega-boule of claim 5 wherein

the plurality of optical fibers and the plurality of support rods form a fused monolithic stack, when heated and pressed.

7. The mega-boule of claim 1 wherein

the plurality of optical fibers of the first and second areas form transverse microchannels in cores of the plurality of optical fibers, when the cores are etched.

8. The mega-boule of claim 1 wherein

the first and second areas each form one of a rectangular geometry and a circular geometry.

9. The mega-boule of claim 1 wherein

the cross-sectional surface is of a predetermined area, and

the predetermined area is based on accommodating semiconductor wafer fabrication tools.

10. The mega-boule of claim 1 wherein

the first and second areas each includes a size corresponding substantially to a size of an active region of an MCP configured as an amplifier for an image intensifier tube.

11. A method of forming a plurality of microchannel plates (MCPs) comprising the steps of:

(a) providing a bundle of optical fibers, wherein each optical fiber includes a cladding formed of non-etchable material and a core formed of etchable material;

(b) stacking a plurality of the bundles to form at least first and second cross-sectional areas, defining first and second mini-boules, respectively;

(c) stacking non-etchable material interstitially between and surrounding the at least first and second mini-boules; and

(d) fusing the plurality of bundles and the stacked non-etchable material for forming the plurality of MCPs in the at least first and second cross-sectional areas.

12. The method of claim 11 further including the steps of:

(e) dicing the fused bundles and non-etchable material to form multiple mega-boule wafers, each mega-boule wafer defining a batch die; and

(f) activating, and metallizing each mega-boule wafer for forming the plurality of MCPs.

13. The method of claim 12 further including the step of:

(g) extracting from each mega-boule wafer the plurality of MCPs.

14. The method of claim 12 wherein step (f) includes

etching each mega-boule wafer to form microchannels in the cores of the optical fibers,

reducing the non-etchable material of the cladding of the optical fibers to render the cladding electron emissive, and

applying a thin metal layer to each planar surface of the mega-boule for forming electrical contacts on the plurality of MCPs.

15. The method of claim 11 wherein step (d) includes

heating and pressing the plurality of bundles and the stacked non-etchable material to form a monolithic stack.

16. The method of claim 11 wherein step (b) includes

stacking the plurality of bundles to form at least first and second cross-sectional sizes of the respective first and second mini-boules to correspond substantially to respective cross-sectional sizes of active regions of MCPs configured as amplifiers for image intensifier tubes.

17. The method of claim 11 wherein steps (b) and (c) include stacking the plurality of bundles and the non-etchable material to form a predetermined cross-sectional size, and

the predetermined cross-sectional size is based on accommodating semiconductor wafer fabrication tools.

18. The method of claim 11 wherein step (b) includes stacking the plurality of bundles to form the at least first and second cross-sectional areas into one of a rectangular geometry and a circular geometry.

19. A method of forming a batch die for forming multiple microchannel plates (MCPs) comprising the steps of:

(a) providing etchable and non-etchable optical materials; and

(b) stacking the etchable and non-etchable optical materials to form a stack having a cross-sectional surface including at least first, second and third areas;

wherein the first and second areas are stacked with the etchable optical material and the third area is stacked with the non-etchable optical material, and

the third area is disposed interstitially between and surrounding the first and second areas.

20. The method of claim 19 wherein

the stacking of the etchable and non-etchable optical materials includes forming the first, second and third areas distinctly and separately from each other.